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ABSTRACT

Findings of a study that examined school organizational change associated with the implementation of open enrollment in Minnesota are presented in this paper. Data were derived from mailed surveys completed by 126 principals at the end of the 1989-90 school year. A three-way multivariate research design with seven dependent variables was used to estimate differences in open-enrollment effects between participating and nonparticipating schools, large and small schools, and rural and urban schools. Findings indicate that open enrollment has: (1) created a market system for educational services; (2) stimulated improvements in curricula and support services; (3) promoted greater parent and teacher involvement in school planning and decision making; (4) fostered a more equitable distribution of school resources and student access to educational services; and (5) increased the ethnic and cultural diversity of schools. Open enrollment had a greater impact on large and rural schools. Rural schools experienced a greater amount of organizational change than urban schools and have expanded their curriculum and service programs to the limit of their resources. The pattern of organizational change suggests that most open-enrollment effects tend to diminish with experience in the program, especially in the case of parent/teacher influence on school management, but they do not return to preprogram levels. Sustained effects in school improvement and specialization in educational programming are noted. School type and wealth do not appear to be associated with school organizational change in response to open enrollment. Four figures and eight tables are included. (Contains 66 references.) (Author/LMI)

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Organizational Change At The Local School Level Under Minnesota's Open Enrollment Program

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Organizational Change At The Local School Level
Under Minnesota's Open Enrollment Program

- ABSTRACT -

This paper presents the results of a study of the school organizational change associated with the implementation of open enrollment in Minnesota. One hundred twenty-six (126) school principals were surveyed by mail at the end of the 1989-90 school year, just prior to the mandatory participation in open enrollment by all school districts. A 3-way multivariate research design with seven (7) dependent measurements was employed to estimate differences in open enrollment effects between participating and nonparticipating schools, small and large schools, and rural and urban schools. Our data from surveyed principals indicate that open enrollment has: (1) created a market system for educational services (characterized by increased competition and collaboration between school districts, and the specialization of educational programs); (2) stimulated improvements to school curricula and support services; (3) promoted greater parent and teacher involvement in school planning and decision-making; (4) fostered a more equitable distribution of school resources and student access to educational services; and, (5) increased the ethnic and cultural diversity of schools. Large schools were consistently found to be more heavily affected by open enrollment than small schools. Rural schools experienced a greater amount of organizational change than urban schools and have expanded their curriculum and service programs to the limit of financial and staff resources. The pattern of organizational changes observed suggests that most open enrollment effects tend to diminish with experience in the program, especially in parent and teacher influence in school management, but they do not return to pre-program levels. Sustained effects in school improvement and specialization in educational programming were noted. School type (elementary/secondary) and wealth do not appear to be associated with school organizational change in response to open enrollment.

Organizational Change At The Local School Level
Under Minnesota's Open Enrollment Program

The topic of school choice has been on the national education agenda since the Alum Rock Voucher Demonstration Project was conducted over twenty years ago (Jencks, 1970; Weiler, 1974). Theorists, educational leaders, and legislators across the political spectrum have promoted a variety of plans which would provide parents with an effective means of choosing educational services for their children, yet few of these plans have been implemented, and those that have are poorly understood.

One school choice plan which has made it into practice is open enrollment. Simply put, open enrollment programs offer parents an alternative to their resident public school. Parents are generally allowed to choose any public school within a metropolitan school district or an entire state school system. Districtwide open enrollment programs have been implemented in Cambridge, East Harlem, Minneapolis, Montclair, and San Francisco. Statewide programs have been enacted in Arkansas, Idaho, Hawaii, Iowa, Massachusetts, Minnesota, Nebraska, and Utah. States that allow more limited interdistrict student transfers include: Alabama, Arizona, California, Colorado, Ohio, Oregon, and Washington. School choice legislation based on the open enrollment model is under consideration in Alaska, Illinois, Michigan, and North Dakota. Alternatively, Wisconsin and Vermont have been engaged in limited school choice practices which allow state funds to be used to pay the tuition of students enrolled in private nonsectarian schools using vouchers.

With nearly half of the states in the Union practicing or adopting some mechanism to allow parents to choose a public school for their children, open enrollment style school choice programs will likely continue to proliferate in spite of new criticism that not enough is known

about the effectiveness of statewide choice models (Carnegie, 1992).

As the Clinton administration begins to formulate its national education priorities, it is reasonable to assume that the "public schools of choice" approach to school reform and education consumerism will enjoy considerable support. It is likely that the education voucher model, most recently promoted by former President Bush, will once again recede into our country's education policy past. Colorado voters recently defeated a proposed constitutional amendment to require all state money appropriated for the general support of elementary and secondary education to be apportioned to students through vouchers (Education Commission of the States, 1992), and a similar initiative in California was removed from the November 1992 ballot by the State Supreme Court due to a lack of validated signatures (Carnegie, 1992).

Proponents of school choice legislation, whether they support a restricted plan (which would allow parents to choose only among public schools) or an unrestricted plan (which would allow parents to choose among both public or private schools), offer a common argument for their proposals:

(1) Market competition will force schools to improve the quality of education programs and become more responsive to learner needs, thereby, bolstering student achievement (Allen & Helsey, 1992; National Governors Association, 1991; Chubb & Moe, 1990; Fliegel, 1990; Levin, 1990).

(2) School choice will lead to a more decentralized delivery system for education services which will create more autonomy at the local school level (Clune, 1990; Moore, 1990; Chubb & Moe, 1988; Fantini, 1970; Gittell, 1970).

(3) Parent and teacher participation in school planning and decision-making will increase, which will make schools more diverse, innovative, and flexible (Boyer, 1992; Driscoll, 1992; Glazer, 1992; Johnson, 1990; Nath[illegible], 1987; Nathan, 1983; Coleman, Hoffer & Kilgore, 1982; Coons & Sugarman, 1978).

(4) School efficiency and accountability will increase which will result in a more equitable distribution of educational resources (Bell Associates, 1988; Coleman, 1987; Chambers, 1981; Hirchman, 1970).

(5) Schools will become more ethnically and culturally diverse because parents will base their enrollment decisions on specific curriculum offerings or teaching methods, which are factors considered by parents of every race and national origin (U.S. Department of Education, 1992; Liberman, 1989).

Opponents of school choice legislation have historically argued that:

(1) Market competition by itself will not increase student achievement or accomplish school reform (Carnegie, 1992; Raywid, 1992; Sosnick & Ethington, 1992; Carr, 1991; Kolberg, 1991; Zimet, 1973).

(2) The inequities of an already imbalanced system of school finance will only be exacerbated if parents tend to choose only a few *good* schools for their children (Carnegie, 1992; Carr, 1991; Lewis, 1989; Glenn, 1982).

(3) Desegregation progress will be lost if parents and their children segregate themselves largely along racial and economic lines (Carnegie, 1992; Orfield, 1978).

(4) Higher income families will be better able than poorer families to make choices and carry them out. Lower income families will have difficulty providing transportation to schools outside their neighborhoods (Carnegie, 1992; Cohen, 1990; Levin, 1990; Merleman, 1990; Peterson, 1990; Weiss, 1990; Archibald, 1988).

(5) Parents are not generally knowledgeable enough about educational services to make good decisions for their children, and will likely be fooled by false advertising campaigns into choosing particular schools, or make their enrollment decisions based solely on convenience factors (Carnegie, 1992; Clewell & Joy, 1990; Finch, 1989; Bridge & Blackman, 1978).

It would not be appropriate for us to review all of the arguments and counter-arguments in the school choice debate, but it is important to identify some of the issues that are at stake in the search for meaningful answers to policy questions regarding existing programs. What is clear from this debate is that a system-wide change is occurring which will redefine the way schools are organized and administered. How each school individually responds to the forces of change

stimulated by school choice was a primary interest in conducting our research. We anticipated that the type of organizational change reported by our respondent principals would vary considerably, and would likely be a function of their school's local socio-political context.

SCHOOL ADMINISTRATOR STUDY

This paper summarizes the results of our survey research effort, which was designed to assess local school administrator reactions to Minnesota's open enrollment while the program was still in its initiation phase during the 1989-90 school year. A companion study was also conducted at the same time to collect information regarding parent choice behavior, for which we utilized a telephone interview method (Tenbusch, 1992).

Before discussing the details of our study, we will briefly review the chronology of events that led up to the statewide open enrollment program which exists today in Minnesota. During the 1980's, the Minneapolis/St. Paul school systems practiced a form of open enrollment as a means to bolster desegregation efforts. The program proved so successful, that in 1987, the state legislature authorized a voluntary open enrollment plan, and approximately 35% of the state's school districts immediately declared themselves open for student transfers. In 1988, Minnesota lawmakers made open enrollment mandatory for all school districts but allowed two years for full implementation. Beginning in the 1989-90 school year, all school districts with enrollments of over one thousand students were required to participate in the program. By the 1990-91 school year, all school districts in Minnesota were required to be open for interdistrict student transfers.

Our interest in conducting research in Minnesota focused on evaluating the *reported degree of organizational change at the local school level* in response to the forces of competition

created by the open enrollment program. We anticipated that the program would likely stimulate changes in the areas of school curricula and service programs, parent relations, teacher autonomy, inter- and intra-district collaboration, student access to school programs and services, and in the ethnic/cultural diversity of schools.

A multi-scaled questionnaire was used to conduct the school administrator survey with the goal of obtaining answers to the following research questions:

(1) Will the open enrollment program create a market system for educational programs and services within the state (that is a system in which schools compete for students), and if it does, how will local public schools respond to market forces?

   a. Will there be evidence of increased competition between schools?

   b. Will schools develop specialized curricula as a response to competition?

   c. Will administrators engage in efforts to improve their schools' existing educational programs in order to attract/retain students?

   d. Will school districts engage in more cooperative ventures with each other in an effort to offer more comprehensive educational programs?

(2) How will local school administrators respond to the increased decision-making power afforded to parents under the open enrollment program?

(3) Will the open enrollment program stimulate an increase in teacher autonomy and teacher involvement in school management?

(4) Will the open enrollment program help to bring about greater equity in in the distribution of educational resources?

(5) What impact will the open enrollment program have on the ethnic and cultural diversity of Minnesota public schools?

PROBLEMS ENCOUNTERED IN CONDUCTING RESEARCH

We originally planned to do a comparison of participating and nonparticipating schools to uncover the effect of open enrollment. Two important issues were encountered in conducting the research: (1) only a small number of school districts (88) were *not* participating in the open enrollment program at the time of the survey; and, (2) permission to conduct the survey was granted only three months prior to the mandatory participation of *all* school districts in the open enrollment program. The latter circumstance changed the focus of the study from a quasi-experimental format to a comparison of open enrollment *experienced* school administrators and *inexperienced* school administrators. In other words, because of the timing of the survey we found an open enrollment effect everywhere, even among "nonparticipating" schools. We decided to include these schools in our research design because they were the only pre-participation group available for study which we hope can be later used in a follow-up investigation of open enrollment effects.

Another problem was encountered when we examined the group of schools considered "participating." In order to acquire an adequate sample of administrator subjects from the urban areas of Minnesota, schools from the Minneapolis-St. Paul area were over-represented in our study. These school administrators were not only experienced with open enrollment, but *very* experienced with the program, having engaged in interdistrict student transfer for over ten years.

Finally, we discovered after the data had been collected that 90% of the administrator subjects from a sub-group of the nonparticipating schools, specifically nonparticipating-large school administrators, had completed their surveys only two weeks prior to the mandatory implementation of open enrollment by all school districts in Minnesota. This made for an even

more dubious comparison of participating and nonparticipating schools because this sub-group could no longer be considered truly *nonparticipating*.

METHOD

During the planning stage of our research, we decided that a multivariate analysis of variance (MANOVA) model would be the most appropriate method of statistically analyzing the data. Seven (7) dependent measurements (survey scales) were developed from a series of categorical items related to each of our study's research questions and experimental hypotheses[1].

SAMPLE DESIGN

We decided the best method to determine the effects of open enrollment on school organizations was to capture as many demographic characteristics about Minnesota schools that could be reasonably incorporated into a factorial design. We arrived at six (6) variables from which all school districts could be classified. These classification variables included: GROUP (participating/non-participating in open enrollment), TYPE (elementary/secondary), ENROLLMENT (under/over MN median enrollment),[2] WEALTH (under/over MN median tax base)[3], MINORITY (under/over MN average minority student membership)[4], and GEOGRAPHIC (rural-under 5,000 total community population; suburban-5,000-50,000; urban-over 50,000). The GEOGRAPHIC variable was subsequently reduced to two classification types (rural/urban) based on our analysis of a report we received from the Minnesota State Demographer[5], and because there were no schools within the population of nonparticipating schools which met our sampling method's *urban* criteria.

We classified each one of Minnesota's 433 school districts by GROUP, WEALTH, MINORITY, and the original GEOGRAPHIC variable, resulting in a sampling frame with

twenty-four (24) cells (2x2x2x3). Any school district that was more than two standard deviations from the state median/mean on the WEALTH and MINORITY variables was excluded from the sampling frame to reduce any outlier effects associated with these variables.

The sampling frame worked very well for the selection of subjects for the *participating* group of school administrators. After a random selection of four school districts from each cell, another random selection procedure was used to draw a school name from each district according to TYPE and ENROLLMENT characteristics. One school from each district was selected that met one of the following criteria: (1) elementary < 320 enrollment, (2) elementary > 320 enrollment, (3) secondary < 320 enrollment, and (4) secondary > 320 enrollment. The only problem encountered in the selection of participating group subjects was in relation to the GEOGRAPHIC variable. Only four cities in Minnesota could be classified as *urban* according to the original classification criteria, which meant that four subjects were drawn from each of the urban schools of Minneapolis, St. Paul, Deluth, and Rochester. The total number of participating group subjects selected equaled ninety-six (96).

When it came to sampling subjects for the *nonparticipating* group, several completely empty cells were encountered. Virtually all of the eighty-eight (88) school districts were considered either "rural" or "suburban" according to the original GEOGRAPHIC classification criteria, although it was possible to classify these districts by WEALTH and MINORITY variables (none of these districts were considered outlier districts). However, when classifying nonparticipating schools by the MINORITY variable, very few of these districts were found to have minority student memberships above the state median. We decided that the best way to handle the sampling problems associated with nonparticipating schools was to send a survey to

each one of these school districts, making sure to select an equal number of elementary and secondary schools. Some school districts were surveyed twice in order to obtain the required ninety-six (96) subjects to balance the design overall between participating and nonparticipating schools. Unfortunately, there were only ten (10) large schools within the population of nonparticipating school districts, therefore, all of these schools were surveyed. Because the only school districts which were exempt from taking part in open enrollment at the time of our survey were school districts with less than one thousand students, our sample of nonparticipating school administrator subjects came from mostly rural school with less than 320 students.

A total of 192 surveys were mailed to selected principals; 132 were returned, resulting in an overall response rate of 69% for the sample[6]. Of the total number of survey returns, six were considered unusable due to missing data; 126 surveys were used in the analysis. Table 1 clearly shows that the sample of *participating* school administrators represent mostly large/urban schools, whereas the *nonparticipating* group of school administrators represent mostly small/rural schools. In spite of this problem in the research design, the sample of schools was representative of Minnesota schools at the time the survey was conducted.

Table 1: Sample Demographic Information

	Participating	Nonparticipating
NUMBER OF RESPONDENTS	65	61
POPULATION CHARACTERISTICS		
Range:	258-356,677	117-3,187
Median:	8,603	687
Mean:	61,126	941

Table 1: Sample Demographic Information (Continued)

	Participating	Nonparticipating
ENROLLMENT CHARACTERISTICS		
Range:	144-2,350	79-900
Median:	630	220
Mean:	745	239
PER PUPIL EXPENDITURES		
Range:	$1,902-6,600	$2,000-7,000
Median:	$3,900	$3,685
Mean:	$3,949	$3,972
AVERAGE CLASS SIZE	27	25

SURVEY

Our school administrator survey used a direct mail method of reaching subjects. Data were collected during the period of May 15th to August 15th, 1990. Unlike previous research efforts regarding Minnesota's school choice programs which surveyed superintendents, we concentrated exclusively on obtaining the opinions of school principals regarding the perceived impact of open enrollment on their school organizations. The survey was mailed to each of the sampled school principals with a cover letter from the Minnesota Department of Education encouraging participation in the study.

Multiple-item summative scales were developed for each of our study's research questions and related experimental hypotheses. One hundred and seventy-two items (drawn from 83 questions) were used in coding the survey. Brief descriptions of each of the seven (7) dependent measurements used in our investigation are provided in Table 2. The inter-item reliability of the survey scales ranged from .67 to .88 (standardized alpha), which demonstrates that the test for

internal consistency of scale items was within accepted standards of practice for survey research (Scott; 1961; Oppenheim, 1966; Moser & Kalton, 1971; Babbie, 1973; Berdie & Anderson, 1974). The raw scores of each of the survey scales were transformed into an interval measurement calibrated from 0 to 100[7]. We interpreted the scores on each scale to represent the proportion of potential activities a school initiated in response to open enrollment.

Table 2: Description of Dependent Measurements

Scale Type	Reliability	Description
Competition	.80	- estimate of information dissemination activities regarding open enrollment. - amount of promotional activity regarding school specific educational programs. - level of competition between respondent's school and other schools. - estimate of respondent efforts to duplicate successful educational program offered by competitors.
Specialization	.67	- estimate of respondent efforts to develop unique/ distinctive educational programs. - changes to school philosophy designed to attract more students. - degree of utilization of any special skills/talents among teachers for new programs/classes.
School Improvement	.85	- number of improvements to school curricula and support services. - changes in the use of educational technologies and teaching methods. - changes in student achievement and school climate.
Cooperation	.75	- level of cooperation between respondent's school and other schools (other districts; within district; private schools; over extracurricular programs).

Table 2: Description of Dependent Measurements (Continued)

Scale Type	Reliability	Description
Parent Influence	.88	- number of curriculum/program changes based on parent suggestions. - changes in parent satisfaction, and school responsiveness to parents. - involvement of parents in school planning and decision-making. - degree of perceived "threat" to school's financial security associated with parent decision-making power.
Teacher Influence	.85	- changes in teacher autonomy. - involvement of teachers in school planning and decision-making. - changes to teacher-parent and teacher-student relationships.
Equalization	.69	- estimate of respondent efforts to redistribute school financial and staff resources on a more equitable basis. - changes in student access to educational programs and services.

RESULTS

ANALYSIS PLAN

A primary purpose of our analysis was to determine how participating and nonparticipating subjects differed on seven (7) dependent measurements. A full factorial analysis which incorporated the GROUP variable and all of the other five (5) remaining independent variables would have been implausible given the sample size. Thus, we instead focused on testing various subsets of these variables limited to 3-way MANOVA analyses. During our exploratory examination of the data, we discovered that the MINORITY variable was of little

practical use because each combination of this variable with others always resulted in some completely empty cells within the factorial design. Hence, we turned to the effects of GEOGRAPHIC status (rural/urban), TYPE, WEALTH and ENROLLMENT. Univariate analyses indicated substantial GEOGRAPHIC effects, therefore, we retained this variable in all of our models.

Table 3 provides MANOVA results for a GROUP x TYPE x GEOGRAPHIC design, and as can be seen from the significance tests, school type appears to be unrelated to the open enrollment phenomenon observed. This finding suggests that elementary and secondary schools experienced the same level of organizational change at the local school level due to open enrollment.

Table 3: MANOVA Analysis (GROUP x TYPE x GEOGRAPHIC)

Source	A	dfn	dfe	f	p. value
GROUP x TYPE x GEO	.060	7	112	1.03	.410
TYPE x GEOGRAPHIC	.033	7	112	0.55	.787
GROUP x GEOGRAPHIC	.175	7	112	3.41	.002
GROUP x TYPE	.010	7	112	0.17	.991
GEOGRAPHIC	.289	7	112	6.50	.000
TYPE	.048	7	112	0.81	.578
GROUP	.331	7	112	7.95	.000

Table 4 displays MANOVA results for a GROUP x WEALTH x GEOGRAPHIC design and demonstrates that school tax base (in equalized mils) is unrelated to the open enrollment phenomenon observed. It appears that variation in per pupil expenditures is not related to the degree of organizational change that has occurred at the local school level due to open enrollment. This finding contradicts a recent national study on school choice which claims that

statewide open enrollment programs will lead to a greater degree of educational inequities statewide, with rich school districts becoming richer and poor school districts becoming poorer, because parents will naturally choose schools with the highest per pupil expenditures (Carnegie, 1992).

Table 4: MANOVA Analysis (GROUP x WEALTH x GEOGRAPHIC)

Source	A	dfn	dfe	f	p. value
GRP x WEALTH x GEO	.060	7	112	1.03	.409
WEALTH x GEO	.078	7	112	1.35	.230
GROUP x GEOGRAPHIC	.163	7	112	3.11	.005
GROUP x WEALTH	.089	7	112	1.56	.152
GEOGRAPHIC	.293	7	112	6.65	.000
WEALTH	.102	7	112	1.83	.087
GROUP	.328	7	112	7.82	.000

The remaining model, GROUP x ENROLL x GEOGRAPHIC, produced the most significant results (see Table 6). Even with the number of independent variables reduced to three (3) some cell sizes were quite small, therefore, we excluded the 3-way interaction and the GEOGRAPHIC x ENROLLMENT term from our model[8]. In discussing the results we present the predicted cell means based on our model, rather than the actual cell means[9]. Given the small sample sizes for some cells, we believe the adjusted value is a better estimate of the true population mean for each cell than is the observed mean. We judged the effect size of statistically significant results based on the *pooled within cells standard deviation* for each scale, using the criteria listed in Table 5.

Table 5: Criteria For Determining Effect Size of Significant Results

Effect Size Range	Interpreted As:
0.00 - 0.25	Low
0.25 - 0.50	Low-Moderate
0.50 - 0.75	Moderate
0.75 - 1.00	Moderately-High
1.00 - 1.50	High
1.50+	Very High

SCALE SPECIFIC FINDINGS

Significant interaction and main effect differences were detected for each of the factorial terms in our estimated MANOVA model.[10] Figures 1 to 3 provide a graphical representation of scaled scores by main effect. We discuss each scale in turn below.

Competition Scale

The results indicate that school size (ENROLLMENT) has a moderate effect on competition, with large school administrators reporting higher levels of competition than small school administrators on most of the scale items. For example, large school administrators were more likely to report they had imitated/duplicated the educational programs offered by schools from rival districts and engaged in higher levels of competition with private schools.

School location (GEOGRAPHIC) was also found to have a moderate effect on competition. Rural school administrators reported considerably higher levels of competition than urban administrators on the majority of scale items. Rural school administrators reported consistently high levels of competition with other school districts and appeared to focus a great deal of attention on information dissemination activities regarding open enrollment and were very interested in counseling parents before they made their enrollment decisions.

Table 6

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3-WAY MULTIVARIATE ANALYSIS OF VARIANCE: GROUP x ENROLLMENT x GEOGRAPHIC
Adjusted Mean Scaled Scores By Group, Statistical Test & Reliability Measurements

STUDY GROUPS	CP	SP	SI	CO	PI	TI	EQ
SMALL	**PARTICIPATING (N=65)**						
RURAL (04)	41.5	33.9	48.2	26.1	45.8	41.0	44.7
URBAN (08)	30.6	26.8	10.8	49.4	27.7	17.0	33.9
LARGE							
RURAL (06)	42.9	27.4	57.3	32.6	42.4	41.4	36.9
URBAN (47)	32.0	20.3	19.9	55.9	24.3	17.3	26.1
SMALL	**NONPARTICIPATING (N=61)**						
RURAL (38)	27.3	12.9	16.5	33.1	37.6	16.2	21.4
URBAN (13)	25.2	8.5	7.2	31.1	27.9	14.1	10.5
LARGE							
RURAL (04)	39.0	27.6	31.3	46.2	52.5	55.1	46.6
URBAN (06)	37.0	23.3	22.1	44.2	42.8	52.9	35.6
WITHIN CELLS STANDARD DEVIATION	11.3	21.7	18.9	28.8	19.9	21.3	25.6

ESTIMATED MODEL USING SELECTED TERMS

EFFECT	MULTI.	UNIVARIATE						
GPxGEO	.003	.090	.782	.001	.056	.354	.063	.990
GPxENR	.013	.062	.047	.537	.639	.062	.003	.032
GEO	.000	.014	.248	.000	.108	.003	.026	.130
ENROLL	.026	.018	.440	.011	.166	.239	.002	.255
GROUP	.000	.114	.107	.003	.748	.318	.413	.390
		RELIABILITY						
STANDARDIZED ALPHA		.8018	.6691	.8526	.7479	.8799	.8526	.6939

SCALE RANGE: 0 - 100

CP - COMPETITION
SP - SPECIALIZATION
SI - SCHOOL IMPROVEMENT
CO - COOPERATION
PI - PARENT INFLUENCE
TI - TEACHER INFLUENCE
EQ - EQUALIZATION

Figure 1: Open Enrollment GROUP Effects

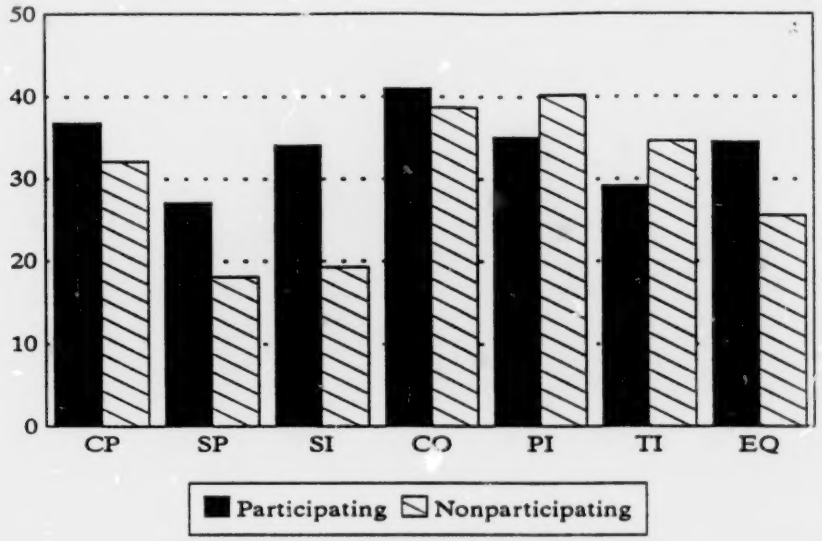
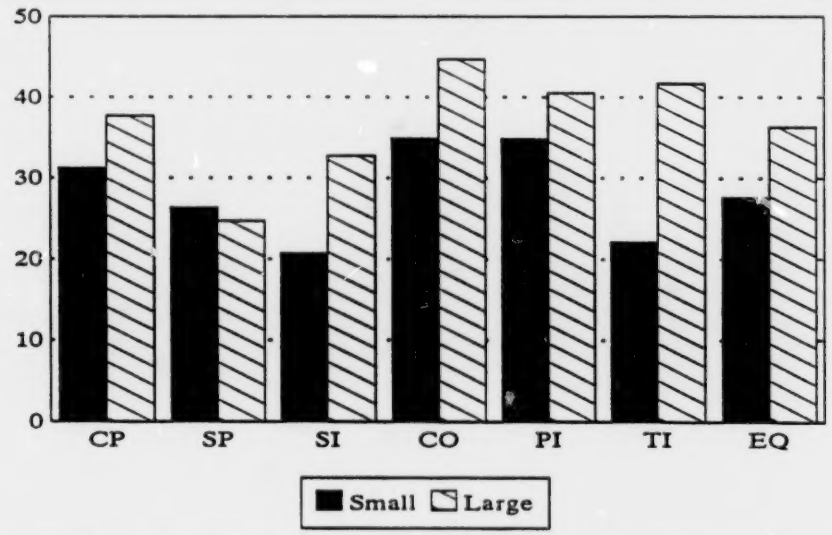
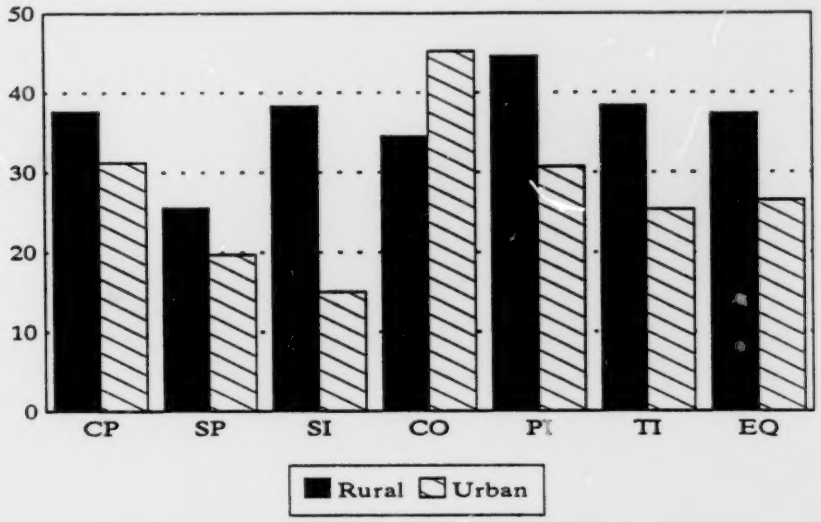


Figure 2: Open Enrollment ENROLLMENT Effects



CP - Competition
SP - Specialization
CO - Cooperation
SI - School Improvement
PI - Parent Influence
TI - Teacher Influence
EQ - Equalization

Figure 3: Open Enrollment GEOGRAPHIC Effects



CP - Competition
SP - Specialization
CO - Cooperation
SI - School Improvement
PI - Parent Influence
TI - Teacher Influence
EQ - Equalization

While there is not an overall effect associated with open enrollment participation or nonparticipation (GROUP), significant interaction effects were indicated for GROUP x GEOGRAPHIC and GROUP x ENROLLMENT. Specifically, participating-small and participating-rural schools exhibited substantially more competition than their nonparticipating counterparts. However, there was no comparable difference between participating and nonparticipating large and urban schools administrators.

The school administrators who displayed the highest competition scale scores typically reported they had engaged in direct methods of informing parents regarding open enrollment (parent newsletters, public meetings, counseling, etc.), initiated program changes which were

based on parent suggestions, developed new curriculum offerings and afterschool programs designed to attract students from other districts and private schools, promoted their school's educational philosophy, encouraged parents to visit their school, and generally tried their best to improve school/community relations.

Specialization Scale

No main effect differences were detected on the specialization scale, however, a moderately-high GROUP x ENROLLMENT effect was observed, which indicates that participating-small schools grew more specialized under open enrollment than their nonparticipating counterparts. The nonparticipating-large school administrators again displayed scores which were comparable to participating school administrators.

The participating-small school administrators reported that they had changed their school's educational philosophies, developed new programs for special student populations, and utilized the unique skills/talents of their teaching staff in new programs. Even within the participating group, small schools outscored the large school on most specialization scale items.

The reintegration of special education students into regular classrooms and the development of new programs for gifted and talented students were the most frequently cited examples of specialized educational programming. International baccalaureate programs, advanced science curriculums, legal, medical, aviation, and technical careers programs were among the list of new educational options offered by some schools to attract new students.

School Improvement Scale

The school improvement scale was the only dependent measurement where a clear (moderately-high) GROUP effect was detected. Participating administrators displayed scale

scores which were consistently double the values observed for nonparticipating administrators. This finding provides strong evidence that open enrollment has stimulated improvements to school curricula and support services throughout the Minnesota school system -- at least as reported by principals. Conversely, the nonparticipating-large group of school administrators (which the reader will recall was in the final stages of preparation for open enrollment at the time of the survey) did not display a noticeable school improvement response. This suggests that specific curricular revisions are carried out some time after the open enrollment program has been implemented, and is not a short-term phenomenon.

The impact of open enrollment on school improvement explicitly involves the following elements: (1) a review of and revision to a school's existing educational programs (most notably in math and reading/english/language arts curriculum) and (2) a positive change in student achievement and school climate. This later finding is very consistent with previous research, which has shown that parents, students, and school administrators *believe* that school choice has had a positive impact on student achievement and school climate (Carnegie, 1992; Driscoll, 1992; Rubenstein, Hamar & Adelman, 1992), in spite of the fact very little hard evidence exist to support these claims (i.e. student achievement changes as measured by standardized tests).

The moderate ENROLLMENT effect detected demonstrates that large schools have made consistently more school improvements in response to open enrollment than small schools. Large school administrators consistently reported that they had engaged in a broad spectrum of program revisions and service improvements which were specifically designed to make their schools more *marketable*.

A high GEOGRAPHIC effect was also detected. Rural schools substantially outscored

urban schools on virtually all of the school improvement indicators, which demonstrates that rural schools have drastically changed their educational programs because of open enrollment. In addition to a great effort to improve their schools' curriculum, rural administrators also reported an expansion of social work/counseling services, and an increase in the number of instructional hours offered to students. One negative impact of open enrollment reported by these administrators was an increase in class size. It is unknown whether this increase was due to the fact that rural schools may have had to reduce the number of classrooms because of a loss of students/funds, or because of a substantial increase in enrollment (nonresident admissions). What is clear in relation to the high degree of organizational change reported by rural school administrators is the fact that they have been *forced* to expand their educational programs in order to stay competitive.

Cooperation Scale

No main effect differences were detected on the cooperation scale, but a moderate GROUP x GEOGRAPHIC effect was observed, which indicated that participating-urban schools engaged in more collaborative education ventures with other school districts than nonparticipating-urban schools. The opposite effect was observed among rural schools, with nonparticipating school administrators reporting more cooperation than participating administrators.

These findings are not inconsistent with previous research on open enrollment. The Massachusetts experience with open enrollment clearly demonstrated that more interdistrict cooperation occurred as an outcome of the program than competition (Galluccio-Steele, 1986). According to our study's definition of the GEOGRAPHIC variable, the Massachusetts school

system is comprised of predominantly *urban* schools. It is possible that urban school districts have a greater opportunity to engage in cooperative ventures because of their geographic proximity to each other. On the other hand, the finding that rural school districts tend not to cooperate was also found in another study of Minnesota's open enrollment program during the same year as our investigation (Rubenstein *et al*, 1992). This study revealed that rural school superintendents view other rural school superintendents primarily as competitors, because virtually all of the rural student interdistrict transfers under open enrollment during 1989-90 were retained within the rural school system.

The school administrators who displayed the highest cooperation scale scores typically reported they had engaged in more joint educational programming with other districts (otherwise known as pairing-sharing), allowed buses from other school districts to cross their district lines, increased cooperation with private schools (particularly among urban schools), improved the coordination of services and programs within their districts, and displayed more cooperation in general over the provision of extracurricular programs (most notably in childcare services and other afterschool programs).

Parent Influence Scale

A moderate GEOGRAPHIC effect was detected on the parent influence scale, which demonstrates that rural schools were consistently more likely to display a parent influence response to open enrollment than urban schools. Rural administrators typically reported that they had made a variety of parent-initiated curriculum changes and increased the frequency of contacts/consultations with parents (both individually and in groups) since the open enrollment program began. These administrators, however, complained that parents would often threaten

to enroll their children in another school unless they "got their way" on some issue, and they indicated that open enrollment could have a profound impact on the financial stability of their schools if they were to lose even a small number of students.

While there was no overall GROUP effect observed on the parent influence scale, a very interesting GROUP x ENROLLMENT interaction effect was detected. Specifically, the nonparticipating-large school administrators reported a substantially greater parent influence response to open enrollment than their participating counterparts, and even though participating-small school administrators again outscored their nonparticipating counterparts on parent influence, the gap was much smaller that what was observed for the other scales. These findings suggest that the open enrollment program has stimulated an increase in parent involvement in school affairs during the early stages of program implementation. The reason for this phenomena is clear. Nonparticipating administrators were much more likely than participating administrators to rate the open enrollment program as a *great threat* to the financial security of their schools and were very interested in involving parents in school decision-making as a means to avoid student transfers. It is possible that the dramatic increase in parent influence observed among nonparticipating schools is more of an anticipatory response to open enrollment and is not sustained over time.

The high levels of perceived threat displayed by nonparticipating administrators in relation to parent decision-making power appears to be unfounded. Participating administrators, having gone through the initial anxiety about the change in their relationship to parents, later recognized that parent involvement in school affairs need not be maintained to secure parental support for their programs. Parent influence appears to diminish after completion of the early

stages of open enrollment implementation, but it is unlikely that this influence will settle back to pre-open enrollment levels. Seasonal peaks in parent influence will likely coincide with the annual application deadlines for student transfers.

The parent influence effect exhibited by all nonparticipating school administrators was characterized by an increase in the frequency of curriculum changes in response to parent demands, and by a greater amount of school responsiveness to individual parent wishes in general. The most frequent example of parent influence reported by participating administrators can be stated simply as a determined effort to *keep parents satisfied*.

Teacher Influence Scale

A moderately-high ENROLLMENT effect was detected on the teacher influence scale, which demonstrates that large schools provide teachers with greater access to school decision-making processes than small schools. Perhaps in larger, more bureaucratic settings where a substantial number of changes have been made over a broad spectrum of services and programs, school administrators are more willing to delegate management responsibilities among their teachers.

A moderate GEOGRAPHIC effect was observed, which demonstrates that rural school administrators were more likely to display a teacher influence response to open enrollment than urban school administrators. Rural administrators consistently reported that open enrollment had stimulated an increase in teacher autonomy, teacher decision-making power, and teacher involvement in program development and curriculum design. Rural administrators placed particular emphasis on improving teacher-student relations under conditions of school choice. This type of response is understandable because if students can be convinced to stay at their

resident rural school, their parents will most likely approve.

Two significant interaction effects were noted in the moderate-to-high ranges for GROUP x ENROLLMENT and GROUP x GEOGRAPHIC. Both of these interaction effects were similar to the results for other scales. Participating-small schools displayed a substantially greater teacher influence response than nonparticipating-small schools, but this pattern was reversed for the large school cohorts. In fact, the nonparticipating-large group of school administrators displayed the highest scale scores within the sample. While this group was just preparing to initiate open enrollment at the time of our study, this finding suggests that teachers are empowered almost as much as parents during the transition to a school choice environment, and teachers are extensively involved in the planning and decision-making processes associated with making this transition.

Overall, participating-rural administrators displayed a slightly greater parent influence response than their nonparticipating counterparts. The pattern of responses were reversed among urban schools, where nonparticipating administrators substantially outscored their participating counterparts. The reason for this pattern is unclear, but it is possible that the participating-urban school administrators have become so familiar with interdistrict transfer practices that they are no longer as threatened by open enrollment and do not feel as great a need as nonparticipating administrators to enlist the support of teachers in preventing a loss of students. If this is true, teacher influence will tend to diminish in like fashion to parent influence, as administrators gain more experience with open enrollment.

The school administrators who displayed the highest teacher influence scale scores typically reported an increase in teacher decision-making power overall and a greater degree of

involvement of teachers in program development and curriculum design. Among participating administrators specifically, improvements in teacher-student and teacher-parent relations were frequently noted in relation to open enrollment. As teachers are usually in more direct contact with students and parents than most school administrators, this finding suggests that the status of teachers may be permanently raised under conditions of school choice because of the vital role they play in maintaining harmonious home-school relations.

Equalization Scale

No main effect differences were detected on the equalization scale, but a moderately-high GROUP x ENROLLMENT effect was observed which indicates that participating-small school administrators were substantially more likely than nonparticipating-small school counterparts to engage in efforts to redistribute school resources (both financial and staff) on a more equitable basis, and to make systemic changes which would guarantee more equal access to educational programs and services to all students. The GROUP x ENROLLMENT effect was reversed among large schools, but the effect size was small. Once again, the nonparticipating-large school administrators outscored their participating counterparts, which indicates that during the transition to open enrollment, school administrators are interested in maximizing school resources available to all students.

The school administrator who displayed the highest equalization scale scores frequently reported that a primary goal under open enrollment is to insure that there are *no favorites* when it comes to providing educational services to children.

IMPACT OF OPEN ENROLLMENT ON THE ETHNIC DIVERSITY OF SCHOOLS

In a separate descriptive analysis, we examined open enrollment's impact on the

ethnic/cultural composition of schools. Table 7 displays the net change in student ethnicity over the first two years of open enrollment and compares the average changes observed statewide to that which was observed for sample schools. Although minority student membership is apparently on the rise throughout Minnesota, it can be seen that participating schools experienced an increase in minority student membership that was double the state average. Nonparticipating schools, on the other hand, experienced a decrease in minority student membership.

Table 7: Net Changes In Student Ethnicity Between 1988 & 1990

ETHNICITY	STATE	PARTICIPATING	NONPARTICIPATING
White	-0.50 %	-4.00 %	3.00 %
Black	0.43	0.90	0.00
Hispanic	0.12	0.20	0.10
Asian	0.27	0.60	0.00
Native American	0.10	0.30	-0.03

Table 8 provides a listing of responses observed to survey items which queried school administrators regarding the perceived racial/cultural issues linked to open enrollment. The responses to item 1 for both participating and nonparticipating administrators demonstrate that the proportion of new student admissions which appear to be racially motivated was well under 1%. For item 2, participating administrators perceived a higher level of parental concern regarding the open enrollment program's impact on school ethnic/cultural student composition than nonparticipating administrators; but again, the reported figures are quite low. On item 3, participating administrators reported a noticeable increase in ethnic/cultural diversity of their schools that is linked to open enrollment.

Table 8: Racial/Cultural Issues Related To Open Enrollment

SURVEY ITEM	PARTICIPATING	NONPARTICIPATING
(1) Proportion of New Admissions Related to Parental Desire to Seek a Different Racial/Cultural Student Composition.	0.03 %	0.02 %
(2) Proportion of Parents Expressing Concern Regarding How OE Program Might Change School's Racial/Cultural Student Composition.	1.72 %	0.65 %
(3) Changes in School's Ethnic/Cultural Student Composition due to the OE Program.		
MORE DIVERSE	9.23 %	1.64 %
NO CHANGE	89.23	98.36
LESS DIVERSE	1.54	0.00

Our analysis of ethnic/cultural changes in student populations related to open enrollment suggest that the program has fostered a small but noticeable increase in ethnic diversity among participating schools. It is too early to determine whether or not parents will use their choice option to avoid racial integration; but so far, open enrollment appears to have advanced, not inhibited, school desegregation efforts within Minnesota. These findings are supported by the companion research to this study, which was designed to obtain information regarding parent choice behavior (Tenbusch, 1992). Since open enrollment began, a proliferation of multicultural curriculum offerings has occurred among participating schools, which gives rise to further optimism regarding the program's potential for stimulating ethnic diversity. However, Minnesota is a ethnically-homogeneous state, and these findings may not be generalizable to other states.

ASSESSMENT OF POSSIBLE OPEN ENROLLMENT EXPERIENCE EFFECTS

After reviewing the results from our 3-way MANOVA analysis, we became curious about

the pattern of consistently high scale scores displayed by the nonparticipating-large cohort of schools. The data collected from these schools were clearly responsible in part for the large number of interaction effects observed throughout our study. This group of administrators outscored their participating counterparts on six our of seven scaled measurements. We reasoned it was possible that the nonparticipating-large school administrators may, in fact, be displaying some type of open enrollment *initiation response*, given the timing of their survey returns. We decided to treat this cell separately in a further examination of the data set.

It is important to keep in mind that these administrator subjects tended to display relatively high scale scores anyway because they represent large schools from predominately rural areas, which are two factors that have been shown to be associated with open enrollment effects. Nevertheless, in an attempt to identify the effects of *experience* in relation to open enrollment using the limited data available, we reorganized our eight study groups into three new groups: (1) inexperienced schools (which included all nonparticipating-small school administrators), (2) just-initiated schools (which included all nonparticipating-large school administrators), and (3) experienced schools (which included all participating school administrators).

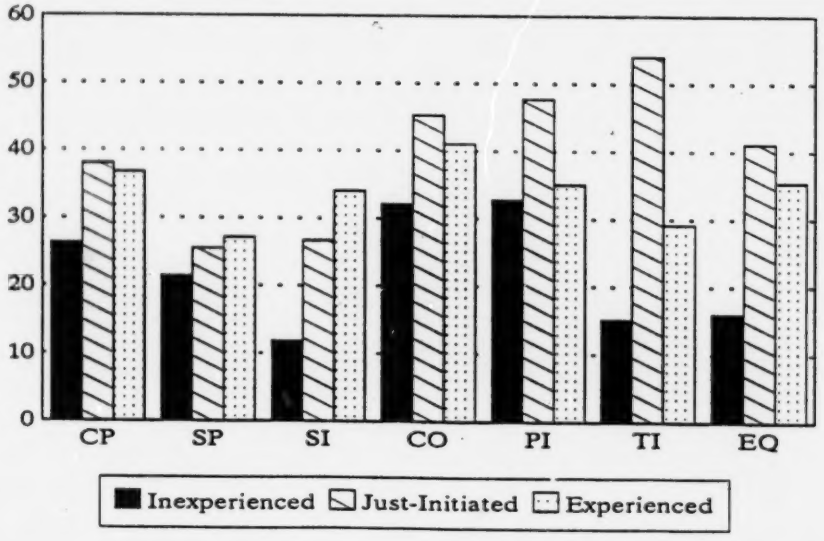
Figure 4 provides a graphical representation of the results, which demonstrates that the initial school organization response to open enrollment is quite dramatic in the areas of: interdistrict competition for students (competition scale), interdistrict collaboration (cooperation scale), responsiveness to parent wishes/demands (parent influence scale), teacher involvement in program development and curriculum design (teacher influence scale), and the redistribution of school resources (equalization scale). Once a school has acclimated to the conditions of school choice under open enrollment, the initial change in these areas do not appear to be sustained.

This seems particularly true for parent and teacher influence in school affairs, as indicated by a substantial drop in the associated measurements. Competition with other schools appears to remain fairly high even after a school has made its adjustment to the open enrollment program.

Figure 4 also demonstrates that a school's ability to develop unique educational programs and services (specialization scale) improves with experience, and efforts to enhance existing school programs and services tend to become even more focused (school improvement scale).

Our interpretation of open enrollment experience effects appear to be consistent with the pattern of results obtained from our 3-way MANOVA analysis, but should be treated with a great deal more caution because the groups used to determine these effects cannot be considered truly homogeneous other than in terms of the timing of the survey responses and participatory status.

Figure 4: Open Enrollment Experience Effects



CP - Competition
SP - Specialization
CO - Cooperation
SI - School Improvement
PI - Parent Influence
TI - Teacher Influence
EQ - Equalization

DISCUSSION

The results of our study indicate that a moderate level of organizational change has occurred at the local school level due to open enrollment. Scale values were consistently in the 30 - 50 point range for most groups, irrespective of participatory status, school size, or geographic location. Considering only about four-tenths of one percent of Minnesota students participated in the open enrollment program during the 1989-90 school year, the amount of organizational change reported appears to be disproportionately high. The level of local school changes reported in the areas of curriculum, parent and teacher decision-making power, and student access to programs and services far exceeded any apparent demand for change created by the actual movement of students.

The comparison of changes which have occurred among participating schools versus nonparticipating schools may have been clouded by an open enrollment initiation response among nonparticipating-large schools. However, the issue as to whether or not participating schools did better than nonparticipating schools on any particular measurement is rather superfluous since the nonparticipating schools did not have the luxury of being nonparticipating for much longer. It is reasonable to assume that nonparticipating school administrators were sensitized to the potential impact of open enrollment on their school programs because of the many preparatory efforts in which they were engaged at the time of our survey.

Taking into consideration the timing of our survey in relation to the results, we were left with the impression that more GROUP related main effect differences would have been observed if we had conducted our research six to eight months earlier. Yet the timing of our survey may have produced a serendipitous outcome by identifying open enrollment experience effects. The

nonparticipating-large group of administrators appears to have provided us with valuable information regarding the short-term effects of open enrollment on school organizations, whereas, the sample of participating administrators (many with over two years experience with open enrollment) offered a more long-term perspective on the program's impact.

Large school administrators displayed a much greater responsiveness to open enrollment than small school administrators, except in the specialization of educational programs. Overall, large schools must be viewed as more adaptive than small schools to the type of organizational change stimulated by the open enrollment program. A distinct competitive advantage is held by large schools under conditions of school choice because they have a greater number of staff and economic resources that can be employed in making their educational programs more marketable. It is too early to tell what will happen to small schools under open enrollment, but it appears their only weapon in a competitive environment with large schools is to specialize. If small schools are forced to close because of open enrollment, this would be unfortunate because there is evidence to suggest that small schools offer a better learning climate to their students than large schools (Tenbusch, 1987; Coleman *et al*, 1982; Chambers, 1981; Coleman, 1981).

One of the most important findings from our investigation was the high level of organizational change experienced by rural schools in response to open enrollment. Rural school administrators consistently outscored their urban school counterparts on all scale measurements except *cooperation*. However, much of the change among rural schools may be a survival response. A high proportion of rural school administrators reported that they had expanded their school's curriculum and support services to the limit of their staff and financial resources because of open enrollment. We found that these administrators typically perceived the program to be

a direct threat to their school's financial security, because a loss of even a small number of students would force their district to consolidate with a neighboring one, or worse, threaten their school's very existence. Indeed, all three school closings due to open enrollment noted in our sample were rural schools.

Although students are the beneficiaries of the improved and expanded educational programs now offered by rural schools, it is likely the smaller schools among this group will not be able to attract or retain enough students to keep their doors open. Open enrollment will likely lead to fewer and larger rural schools and more consolidation of rural school districts unless the state legislature does something to intervene. One supporter of school choice anticipated the kind of impact we observed among small rural schools and, therefore, has recommended that additional funding be made available to these schools during the early years of open enrollment to insure their survival while acclimating to the program (Nathan, 1987).

CONCLUSIONS

(1) *Open enrollment has created a market system for educational services within the State of Minnesota*, but we found considerable variation in local school administrator response to market forces. Some school administrators responded by engaging in a high degree of competition with their neighboring districts (rural schools), while others were more interested in establishing stronger collaborative relationships (urban schools). Another group believed that it was in their best interest to broaden their school's curriculum offerings (large schools), and still others engaged in efforts to specialize their educational programs (small schools). Our finding that some schools were particularly responsive to open enrollment, while others appeared to barely notice the program, is very consistent with how organizations historically

respond to a major change in their environment (i.e. when American automakers were faced with a flood of inexpensive Japanese products into their marketplace).

Our results have shown that the only clear GROUP effect difference we observed was in the area of school improvement. Participating schools engaged in curriculum enhancements (particularly in math and reading) and expanded their support service programs at double the rate observed among nonparticipating schools.

(2) *Open enrollment has stimulated an increase in parent decision-making power*, which is characterized initially by administrators involving parents more in school planning efforts and day-to-day operations. School administrators were seen to become more responsive to parent wishes and demands in an effort to keep them satisfied. By granting parents a greater voice in school affairs and student specific programming, most of the administrators we surveyed believed that they can avoid losing students. Our analysis of responses from participating school administrators, however, leads us to believe that parent influence will decrease over time as the open enrollment program becomes more established. Apparently the perceived level of *parental threat* to school financial security experienced by most administrators as they enter the program is largely unfounded. We concluded that the post-open enrollment implementation drop in parent influence will not go below pre-program levels, and that a permanent change in the *power* relationship between parents and school officials has occurred.

(3) *Open enrollment has stimulated an increase in teacher autonomy and teacher involvement in school management*, which is characterized by administrators involving teachers more in school planning efforts (particularly in the area of program development). We found that participating school administrators were very interested in taking advantage of any

specialized skills/talents among members of their teaching staff in the development of new course offerings. Significant improvements in teacher-parent and teacher-student relations were also found to be associated with open enrollment effects. We predict that the decision-making status of teachers has been permanently raised under the program because of the vital role teachers play in maintaining a positive relationship between home and school. We did, however, uncover some evidence that suggests that teacher influence will decrease as school administrators become more experienced with open enrollment.

(4) *Open enrollment has brought about greater equity in the distribution of educational resources at the local school level.* Although the evidence we have to support this claim is limited, we found that the majority of school administrators from all groups acknowledged the fact that open enrollment would lead to more accountability in the management of school resources (both financial and staff). This means that it is important for parents to be convinced that there are *no favorites* when it comes to provision of educational services.

(5) *Open enrollment has stimulated a small but noticeable increase in the ethnic and cultural diversity of Minnesota public schools.* It is, however, important to mention that most schools in Minnesota contain a very small percentage of minority students, and our finding may not be generalizable to other states. It may also be too early to determine whether or not parents will use open enrollment to choose schooling options for their children along racial lines, because so few students were using the program at the time of our survey; but what evidence we have, suggests they will not. These findings are supported by our companion parent study (Tenbusch, 1992), which found that both white and nonwhite parents chose nonresident schools for their children primarily for academic reasons and were generally unconcerned about the racial/ethnic

composition of these schools.

Another study of Minnesota's open enrollment program during the 1989-90 school year reported that 97% of suburban and rural school superintendents predicted that the program would have "no impact" on the racial and ethnic balance of their districts. However, some small gains in minority students in suburban districts was reported (Rubenstein *et al*, 1992).

NONSIGNIFICANT RESULTS

It is curious that we did not find any evidence that school type or school wealth were significant factors in relation to open enrollment effects, even though we expected they would be. A possible explanation of these findings can be found from the results of the investigation previously mentioned (Rubenstein *et al*, 1992). In this study, it was found that interdistrict transfers were fairly evenly distributed across all grade levels, with some concentration in the K-3 and 10-12 grade ranges. This would support the conclusion that elementary and secondary schools are equally affected by open enrollment.

With regard to wealth, the Rubenstein *et al*, 1992 study found evidence that some students were migrating from poor school districts to wealthy ones, but the pattern of movement was so small they concluded it to be virtually insignificant. This finding, coupled with the results of our investigation, appear to contradict the claims made by open enrollment detractors (Carnegie, 1992) that school choice will lead to greater wealth disparities between school districts and that parents will tend to select only a few *good* schools.

LIMITATIONS

An argument can be made that our comparison of participating and nonparticipating schools was compromised by the fact that these two groups represent distinctly different schools in

factors other than their participatory status. Nonparticipating school districts were much more homogeneous than participating school districts. Only school districts with less than one thousand students were permitted *not* to participate in the program, which meant that most of these districts were located in rural areas with relatively small enrollments. Conversely, participating schools came from a much broader spectrum of geographic locations and were considerable larger. Added to these facts is the problem that many urban schools within the participating group had more than ten years experience with open enrollment, and a sizable portion of the rural schools had decided to participate in the program even though they were not required to do so. How both these factors affected the data obtained from these schools is unknown, but it is clear that our sample of participating schools was not entirely homogeneous. Unfortunately, nothing could be done to correct for these design flaws because the population of participating and nonparticipating schools were simply what they were at the time of our survey.

Another concern we have regarding our results is whether or not we should trust the opinions of local school administrators regarding open enrollment effects. The tendency for school principals to report all aspects of their school programs in the most favorable terms has been repeatedly found in school evaluation research (Hennings, 1990; Quanty, 1986; Duea & Bishop, 1980; McTeer, 1977; Carethers, 1973; Summers & Hammonds, 1969; Mayeshe, 1968). When we compare our study to the investigation conducted during the same year among district superintendents (Rubenstein *et al*, 1992), some differences in opinion between the two administrator groups were revealed. Local school principals reported a much greater degree of organizational change in relation to open enrollment than district superintendents. The question

remains: whose opinion is more reliable? And which administrator group is likely to be the most unbiased toward reporting actual open enrollment effects?

SUGGESTIONS FOR FURTHER RESEARCH

(1) A closer examination of how open enrollment has fostered increased cooperation among Minnesota public schools is recommended (i.e. changes in interdistrict cooperative agreements), and a determination needs to be made regarding how the program has affected district consolidations.

(2) A more thorough investigation of the open enrollment program's impact on rural and small schools is important because we believe these schools are *at risk* in the educational market environment created by the program. Why these schools do not appear to enjoy the same level of resident loyalty found among urban and large schools bears closer examination.

(3) Research in needed on how open enrollment has affected the student rolls of magnet schools and private schools, and how these schools have adapted to the market forces created by the program.

(4) A systematic evaluation of open enrollment's impact on the Minnesota public education system from an equity perspective would be a valuable addition to the literature on school choice.

(5) Continued research regarding the open enrollment program's impact on the ethnic and cultural diversity of schools needs to be conducted, and a determination made regarding the possibility of parents using the program to avoid racial desegregation.

(6) The Minnesota Department of Education, or some independent observer group, needs to monitor possible unfair business practices engaged in by certain school districts. A small but significant number of school administrators reported that "misinformation campaigns" have been

perpetrated against their school district by a competitor district, and fairly widespread public relations campaigns have been initiated by school districts to attract new students even though active recruitment of students is strictly prohibited.

(7) It would be useful to gather data from teachers concerning the organizational change associated with open enrollment.

(8) To obtain more definitive estimates of the effects of open enrollment, it would be interesting to compare organizational features of schools in Minnesota with demographically similar schools in a neighboring non-open enrollment state.

(9) Since open enrollment is supposed to cause improvements in the overall population of schools, it is not reasonable to look for open enrollment effects by comparing students who choose to move with those who don't. Instead, its necessary to compare students in open enrollment states with similar students in non-open enrollment states.

NOTES

[1]For a complete understanding of our study's experimental hypotheses, survey scale development, and a more detailed review of scaled responses the reader is directed to review "Parent Choice Behavior and School Organizational Change: A Study of Minnesota's Open Enrollment Program," a dissertation submitted by James P. Tenbusch, Northwestern University, School of Education & Social Policy, June 1992. This publication is available from University Microfilms Incorporated (UMI), Ann Arbor, Michigan.

[2]Minnesota's median enrollment for both elementary and secondary schools for the 1989-90 school year was 282 students. The median enrollment obtained in our sample was 320.

[3]Minnesota's median tax base (In equalized mils) for the 1989-90 school year was 55.9 with a median per pupil expenditure of $3,498. The median tax base obtained in our sample was 57.0 with a median per pupil expenditure of $3,792.

[4]Minnesota's mean minority student membership for elementary and secondary schools for the 1987-88 was 8.2 %. The mean minority student membership obtained in our sample was 4.4%.

[5]The classification of schools by the GEOGRAPHIC variables of rural, suburban, urban was modified to include only rural and urban. According to a 1988 report issued by the Office of the State Demographer, Minnesota Planning Agency, 80% of the municipalities in the state (2,164) had an agricultural base to their local economy and contained fewer than 1,000 individuals. Conversely, 20% of the municipalities (502) had primarily a manufacturing or service industry base and populations of well over 1,000 individuals. The use of the terms *rural* and *urban* in relation to the GEOGRAPHIC variable is specific to the Minnesota context.

[6]Detailed response rate information includes the following: Participating Group: 71.9% (return dates: 0 - 30 days = 54; 30 - 60 days = 9; 60 - 90 days = 2; unusable returns = 4), Nonparticipating Group: 65.6% (return dates: 0 - 30 days = 29; 30 - 60 days = 11; 60 - 90 days = 21; unusable returns = 2). Other pertinent survey response statistics include: School Type: 46% - elementary; 54% - secondary; Enrollment Size: 50% - small; 50% - large; Geographic Characteristics: 42% - rural; 58% - urban. Three attempts were made to obtain a completed survey from each respondent, which included: mailing additional surveys, writing handwritten appeals, and direct telephone contact.

[7]Transformed interval measurement scores were derived by taking the sum of each subject's scale score, dividing by the total possible score, and multiplying by 100. It was not possible to obtain a score below zero on any of the survey scales.

[8]The 3-way interaction term of GROUP x ENROLLMENT x GEOGRAPHIC was eliminated from our statistical model because it was not significant in any of the univariate ANOVA's. The ENROLLMENT x GEOGRAPHIC interaction term was also eliminated because it was unrelated to our study's purpose of determining differences between participating and nonparticipating schools, even though this interaction was significant on five out of seven univariate ANOVA's. The remaining interaction terms were considered important to our study because they included the GROUP variable and also displayed a consistent pattern of significant ANOVA's. The final statistical model displayed in Table 6 used five out of a possible seven factorial terms.

[9]The adjusted mean calculation included the overall sample mean for each dependent measurement, plus the combination of scores obtained from the five factorial terms included in our statistical model. For example, in calculating the adjusted mean on the competition *scale* for the participating-small-rural group (which contained only 4 subjects) the adjusted mean is based on the overall mean for this scale as well as the effects of *participation* from the GROUP variable, the effects of *small size* from the ENROLLMENT variable, the effects of *rural location* from the GEOGRAPHIC variable, and the interaction effects associated with GROUP x ENROLLMENT and GROUP x GEOGRAPHIC.

[10]We conducted a number of preliminary tests to determine if our model met the MANOVA assumptions, which it did. These tests included: homogeneity of dispersion matrices, Bartlett test of sphericity, and stem-leaf plots. Analysis of the intercorrelation matrix of survey scales (Pearson coefficients) revealed low to moderate degrees of association between dependent measurements, which confirmed that each scale was measuring distinct factors.

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